



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

D3488-041
Job Sheet 186672



Part No: D3488-041

Job Qty: 4 pcs

Part Name: Blade Fitting LH



Part Weight: 0 lbs

Job Created: 11/20/18

Due Date: 12/7/18

Type: SOLD

Status: New

Priority: Medium

Job Tracking No:

Created By: Marie Lajeunesse

Description:

Note: DWG DSK101 REV D, D3488 REV c IPP Rev:A New Issue 06-02-28 JLM IPP Rev:B As per Rev B 06-03-30
JLM IPP Rev:C Now On Doosan Lathe JLM Verified BY:DD IPP REV:D 18.11.09 AS PER DWG REV.C DD
VERF:JFS

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	Doosan - 1	4		12/7/18	0.00	3.42	Doosan - 1		
		pcs							
110	QC 2	4		12/7/18	0.00	0.00	QC 2 - 1		
		pcs					QC 2 - 12		
							QC 2 - 14		
							QC 2 - 17		
							QC 2 - 19		
							QC 2 - 2		
							QC 2 - 20		
							QC 2 - 22		
							QC 2 - 23		
							QC 2 - 25		
							QC 2 - 32		
							QC 2 - 33		
							QC 2 - 35		
							QC 2 - 38		
							QC 2 - 39		
							QC 2 - 4		
							QC 2 - 40		
							QC 2 - 44		
							QC 2 - 45		
							QC 2 - 48		
							QC 2 - 49		
							QC 2 - 50		
							QC 2 - 51		
							QC 2 - 52		
							QC 2 - 54		
							QC 2 - 56		
							QC 2 - 57		
							QC 2 - 62		



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
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Container No: S147748



Part: D3488-041

Job No: 186672

Serial No/Batch: S147748

Revision: D/C

Inspector:

Exp Date:

Instructions: Various STC's

Date: 01/24/19

120 HAAS 4 Axis - B4B	4 pcs	12/7/18	0.34 3.31	QC 2 - 63	
				QC 2 - 8	
				HAAS - 1 - B4B	
				HAAS - 2 - B4B	
				HAAS - 3 - B4B	SBL 19/02/02
130 QC 2	4 pcs	12/7/18	0.00 0.00	HAAS - 4 - B4B	
				QC 2 - 1	
				QC 2 - 12	
				QC 2 - 14	
				QC 2 - 17	
				QC 2 - 19	
				QC 2 - 2	
				QC 2 - 20	
				QC 2 - 22	
				QC 2 - 23	
				QC 2 - 25	
				QC 2 - 32	
				QC 2 - 33	
				QC 2 - 35	
				QC 2 - 38	
				QC 2 - 39	
				QC 2 - 4	
				QC 2 - 40	
				QC 2 - 44	
				QC 2 - 45	
				QC 2 - 48	
				QC 2 - 49	
				QC 2 - 50	
				QC 2 - 51	
				QC 2 - 52	
				QC 2 - 54	
				QC 2 - 56	
				QC 2 - 57	SBL 19/02/02
				QC 2 - 62	
				QC 2 - 63	
				QC 2 - 8	
140 QC 8	4 pcs	12/7/18	0.00 0.00	QC 8 - 12	
				QC 8 - 14	mk 19/02/05
				QC 8 - 17	
				QC 8 - 20	
				QC 8 - 25	
				QC 8 - 3	
				QC 8 - 32	
				QC 8 - 33	
				QC 8 - 35	
				QC 8 - 38	
				QC 8 - 39	
				QC 8 - 4	
				QC 8 - 44	
				QC 8 - 45	
				QC 8 - 49	
				QC 8 - 58	
				QC 8 - 8	
				QC 8 - 9	
				QC 8 - 68	
				QC 8 - 67	
150 Handfinish - 1-1 Chemical-B4B	4 pcs	12/7/18	0.00 0.13	QC 8 - 1 (A)	
				Handfinish - 1 - 1 - B4B	
				Handfinish - 1 - 2 - B4B	

				Handfinish - 1 - 3 - B4B	
				Handfinish - 1 - 4 - B4B	
				Handfinish - 1 - 5 - B4B	
				Handfinish - 1 - 6 - B4B	
				Handfinish - 1 - 7 - B4B	
				Handfinish - 1 - 8 - B4B	
				Handfinish - 1 - 9 - B4B	
				Handfinish - 1 - 10 - B4B	D.R 19/02/15
				Handfinish - 1 - 11 - B4B	
				Handfinish - 1 - 12 - B4B	
				Handfinish - 1 - 13 - B4B	
				Handfinish - 1 - 14 - B4B	
				Handfinish - 1 - 15 - B4B	
				Handfinish - 1 - 16 - B4B	
				Handfinish - 1 - 17 - B4B	
				Handfinish - 1 - 18 - B4B	
				Handfinish - 1 - 19 - B4B	
				Handfinish - 1 - 20 - B4B	
				Handfinish - 1 - 21 - B4B	
				Handfinish - 1 - 22 - B4B	
160 Powdercoat - 1 White GI(A)-B4B	4 pcs	12/7/18	0.00 0.14	Powdercoat - 1 - B4B	
				Powdercoat - 2 - B4B	
				Powdercoat - 3 - B4B	B.R 19-02-15
				Powdercoat - 4 - B4B	
170 QC 3	4 pcs	12/7/18	0.00 0.00	QC 3 - 10	
				QC 3 - 13	
				QC 3 - 15	
				QC 3 - 17	
				QC 3 - 18	
				QC 3 - 2	
				QC 3 - 26	
				QC 3 - 28	
				QC 3 - 3	
				QC 3 - 30	
				QC 3 - 34	
				QC 3 - 36	
				QC 3 - 38	
				QC 3 - 41	
				QC 3 - 51	
				QC 3 - 58	
				QC 3 - 59	
				QC 3 - 6	
				QC 3 - 68	
				QC 3 - 9	
180 Handfinish - 4-1-Assembly-B4B	4 pcs	12/7/18	0.00 0.00	Handfinish - 4 - 1 - B4B	
				Handfinish - 4 - 10 - B4B	BEB 19-02-05
				Handfinish - 4 - 11 - B4B	

DAS 59 01-09

					Handfinish - 4 - 12 - B4B	
					Handfinish - 4 - 13 - B4B	
					Handfinish - 4 - 14 - B4B	
					Handfinish - 4 - 15 - B4B	
					Handfinish - 4 - 2 - B4B	
					Handfinish - 4 - 3 - B4B	
					Handfinish - 4 - 4 - B4B	
					Handfinish - 4 - 5 - B4B	
					Handfinish - 4 - 6 - B4B	
					Handfinish - 4 - 7 - B4B	
					Handfinish - 4 - 8 - B4B	
					Handfinish - 4 - 9 - B4B	
190 QC 5	4 pcs	12/7/18	0.00	0.00	QC 5 - 10	
					QC 5 - 12	
					QC 5 - 17	
					QC 5 - 18	
					QC 5 - 19	
					QC 5 - 22	
					QC 5 - 24	
					QC 5 - 3	
					QC 5 - 38	
					QC 5 - 42	
					QC 5 - 43	
					QC 5 - 49	
					QC 5 - 51	
					QC 5 - 58	
					QC 5 - 68	DAS FEB 05 2019 68
					QC 5 - 9	9-89
					QC 5 - 50	
					QC 5 - 30	
200 Packaging 3-1 - Stock - B4B	4 pcs	12/7/18	0.00	0.00	Packaging 3 - 1 - B4B	
					Packaging 3 - 2 - B4B	
					Packaging 3 - 3 - B4B	
					Packaging 3 - 4 - B4B	
					Packaging 3 - 5 - B4B	
					Packaging 3 - 6 - B4B	
					Packaging 3 - 7 - B4B	
					Packaging 3 - 8 - B4B	
					Packaging 3 - 9 - B4B	
					Packaging 3 - 10 - B4B	
					Packaging 3 - 11 - B4B	
					Packaging 3 - 12 - B4B	
					Packaging 3 - 13 - B4B	
					Packaging 3 - 14 - B4B	
					Packaging 3 - 15 - B4B	
					Packaging 3 - 16 - B4B	BEB19-02-05
					Packaging 3 - 17 - B4B	
					Packaging 3 - 18 - B4B	
					Packaging 3 - 19 - B4B	
					Packaging 3 - 20 - B4B	
					Packaging 3 - 21 - B4B	
					Packaging 3 - 22 - B4B	
					Packaging 3 - 23 - B4B	
					Packaging 3 - 24 - B4B	
					Packaging 3 - 25 - B4B	
					Packaging 3 - 26 - B4B	

				Packaging 3 - 27 - B4B	
				Packaging 3 - 28 - B4B	
				Packaging 3 - 29 - B4B	
				Packaging 3 - 30 - B4B	
				Packaging 3 - 31 - B4B	
				Packaging 3 - 32 - B4B	
				Packaging 3 - 33 - B4B	
				Packaging 3 - 34 - B4B	
				Packaging 3 - 35 - B4B	
				Packaging 3 - 36 - B4B	
210 QC 21 - SA	4	12/7/18	0.00 0.00	QC 21 - SA - 21	21
	pcs			QC 21 - SA - 70	21

Part Op 100 - Doosan Lathe - 1-Turn as per Dwg DSK 101 & Folio FA625
 Descriptions: 110 - QC2- Inspect parts off machine FAI/FAIB
 120 - HAAS CNC Vertical Machine - 1-Machine as per Folio FA625 & Dwg D3488
 130 - QC2- Inspect parts off machine FAI/FAIB
 140 - QC8- Inspect parts - second check
 150 - Chemical Conversion Coat per QSI005 4.1
 160 - White Gloss(Ref 4.3.5.1) per QSI005 4.3-Alum - START TIME: 2:25 OVEN TEMPERATURE: 320°
 FINISH TIME: 2:55 M 138997..
 170 - QC3- Inspect Part Finish
 180 - Assemble as per dwg - Install Inserts as per Dwg D3488
 190 - QC5- Inspect part completeness to step on W/O
 200 - Identify as per dwg & Stock Location: _____ LOCATION : FP001
 210 - QC21- Final Inspection - Work Order Release

Job BOM				
Part / Item	Component Name	Quantity	Operation	Container
D6103-003	Round Billet, Aluminum	4 pcs (1 ea)	100-Doosan - 1	
ALS7-1032-225	Insert	16 Ea (4 ea)	180-Handfinish - 4-1-Assembly-B4B	<u>5038208</u>

M.U.007933

Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
100-Doosan - 1	D6103-003	4	33	0
180-Handfinish - 4-1-Assembly-B4B	ALS7-1032-225	16	451	0

Part Specifications	
Specifications could not be found.	



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D3488-041
Job Sheet 186672



Part No: D3488-041

Job Qty: 4 ea

Part Name: Blade Fitting LH



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 11/20/18

Job Tracking No:

Due Date: 12/7/18

Created By: Marie Lajeunesse

Type: SOLD

Description:

Note: DWG DSK101 REV D, D3488 REV c IPP Rev:A New Issue 06-02-28 JLM IPP Rev:B As per Rev B 06-03-30
JLM IPP Rev:C Now On Doosan Lathe JLM Verified BY:DD IPP REV:D 18.11.09 AS PER DWG REV.C DD
VERF:JFS

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	4 Ea		12/7/18	0.00	0.00	Start Up Machining-2		
100	Doosan	4 pcs		12/7/18	0.00	3.42	Doosan		
110	QC	4 pcs		12/7/18	0.00	0.00	QC2 Machining-2		
120	CNC Vertical Machining	4 pcs		12/7/18	0.34	3.31	HAAS1-3		
130	QC	4 pcs		12/7/18	0.00	0.00	QC2 Machining-2		
140	QC	4 pcs		12/7/18	0.00	0.00	QC8 Machining-2		
150	HandFinish	4 pcs		12/7/18	0.00	0.13	HandFinish1		
160	Powdercoat	4 pcs		12/7/18	0.00	0.14	Powdercoat1		
170	QC	4 pcs		12/7/18	0.00	0.00	QC3		
180	HandFinish	4 pcs		12/7/18	0.00	0.00	HandFinish4		
190	QC	4 pcs		12/7/18	0.00	0.00	QC5		
200	Packaging	4 pcs		12/7/18	0.00	0.00	Packaging3-1		
210	QC21-SA	4 Ea		12/7/18	0.00	0.00	QC21		

Part Op 100 - 1-Turn as per Dwg DSK 101 & Folio FA625

Descriptions: 120 - 1-Machine as per Folio FA625 & Dwg D3488

160 - START TIME: _____ OVEN TEMPERATURE: _____ FINISH TIME: _____

180 - Install Inserts as per Dwg D3488

200 - LOCATION : FP001

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D6103-003	Round Billet, Aluminum	4 Ea (1 ea)	90-Start up Operation	
ALS7-1032-225	Insert	16 Ea (4 ea)	180-HandFinish	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D6103-003	4	23	0
180-HandFinish	ALS7-1032-225	16	888	0

Part Specifications

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Specifications could not be found.

Plex 11/20/18 8:27 AM Dart.lajeunesse.marie

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																											
Date :		Step #:		QTY Effective :				MRB (QS1042) Approval																																																							
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																							
Root Cause		FAULT CATEGORY																																																													
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : 	
Misidentified ☐	Past Due ☐																																																														

DART AEROSPACE LTD		Work Order:	186672
Description: Blade Fitting, LH / Turning Detail for D3488-1/-2		Part Number:	D3488-1
Inspection Dwg: D3488 / DSK101		Rev: B / D	Page 1 of 2

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Lathe Section						
Ø2.150	+/-0.005	2.151				
Ø2.780	+/-0.005	2.780				
Ø3.125	+/-0.010	3.123				
Ø3.346	+/-0.010	3.348				
0.125 x 45°	+/-0.010 x +/-0.1°	0.120 x 45°				
8.000	+0.030/-0.000	8.008				inside Hole
9.250	+/-0.010	9.251				
0.188	+/-0.010	0.188				
R0.032	+/-0.010	R1/32				
R0.062	+/-0.010	R1/16				
Ø0.297	+0.005/-0.001	0.300				
Ø0.430	+/-0.010	0.433				
0.100	+/-0.010	0.101				
0.125	+/-0.010	0.120				
2.620	+/-0.010	2.618				
3.500	+/-0.010	3.500				
1.005	+/-0.010	1.007				
Ø0.484	+0.005/-0.001	0.486				
1.180	+/-0.010	1.180				
3.150	+/-0.010	3.149				
3.070	+/-0.010	3.066				
R0.063	+/-0.010	R1/16				

Done C. 19/01/24

DART AEROSPACE LTD		Work Order:	156672
Description: Blade Fitting, LH / Turning Detail for D3488-1/-2		Part Number:	D3488-1
Inspection Dwg: D3488 / DSK101		Rev: B / D	Page 2 of 2

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Milling Section						
Ø0.508	+0.006/-0.001	.508				
0.750	+/-0.010	.750				
1.500	+/-0.010	1.500				
11.18	+/-0.030	11.80				
R0.062	+/-0.010	.062				
0.125	+/-0.010	.126				
0.590	+/-0.010	.598				
0.793	+/-0.010	.795				
1.351	+/-0.010	1.349				
1.317	+/-0.010	1.319				
1.802	+/-0.010	1.804				

Measured by:	SBL	Audited by:	52	Prototype Approval:	N/A
Date:	19/01/02	Date:	19/02/03	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	06.03.31	New Issue	KJ/JLM	
B	08.09.19	Reformat P/O D3488-041	KJ/JLM	
C	08.12.02	Dimension 8.000 removed	KJ/JLM	